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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,395	06/26/2001	Kuo-Liang Tsai	TSAI3013/EM/6924	9474

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EXAMINER

MICHALSKI, JUSTIN I

ART UNIT PAPER NUMBER

2644

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/888,395

Applicant(s)

TSAI, KUO-LIANG

Examiner

Justin Michalski

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 3-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Op De Beek et al. (Hereinafter "Op De Beek") (US Patent 4,628,530).

Regarding Claim 1, Op De Beek discloses a process for automatically performing a frequency response equalization tuning, said process comprising the steps of: installing a speaker (Figure 1, speaker 11) in an electronic device (Figure 1); commanding a central processing unit (CPU) (references 16, and 9) in said electronic device to simulate and generate a standard sound signal (signal from reference 5 to 11) having a predetermined bandwidth (Op de Beek discloses the audible frequency range of 20Hz to 20kHz) (Column 2, line 28) through a sound control circuit in said electronic device; commanding a digital equalizer (reference 9) in said electronic device to receive said standard sound signal (signal from reference 5 to 11) and outputting said standard sound signal through a speaker (11) in said electronic device; commanding a microphone (14) to receive said standard sound signal for sending back to said CPU (16 and 9) through said sound control circuit (Figure 1); commanding said CPU to perform a frequency response matching on said received sound signal with respect to a predetermined ideal frequency response data (frequency analyzer 17 and Column 1,

lines 48-54); calculating a set of equalization tuning gains in said predetermined bandwidth (Column 2, lines 49-52); inputting said gains in said digital equalizer for storing (signal 10); and commanding said digital equalizer to automatically perform a frequency response equalization tuning on said speaker, thereby maintaining said output sound signal at an optimum frequency response state (Op de Beek discloses automatic correction (equalization) of acoustic signal (Column 1, lines 34-35).

Regarding Claim 3, Op de Beek further discloses after said digital equalizer (9) has received said sound signal from said sound control circuit, commanding said digital equalizer (9) to compensate said sound signal based on a predetermined initial gain (signal 10), and sending said compensated sound signal to said speaker (11) for outputting.

Regarding Claim 4, Op de Beek further discloses after said microphone (14) has received said compensated sound signal, commanding said sound control circuit to convert said sound signal into a digital sound data (converter 18), and sending said digital sound data back to said CPU (16).

Regarding Claim 5, Op de Beek further discloses commanding said CPU to perform a frequency response matching on said received sound signal with respect to said outputted standard sound signal based on a plurality of sampling frequencies (Op de Beek discloses frequency bands of 40Hz) (Column 2, lines 49-52); and inputting said gains in said digital equalizer for storing (reference 9 via signal 10).

Regarding Claim 6, Op de Beek further discloses said standard sound signal having said predetermined bandwidth is a standard bandwidth is a standard sound file in an audible frequency range of 20Hz to 20kHz (Column 2, line 51).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Op De Beek as applied to claim 1 in view of Klippel. Op De Beek discloses a device as stated apropos of claim 1 above but does not disclose data based on specifications of said speaker to be installed in electronic device prior to storing said ideal frequency response in memory. Klippel also discloses a device for correcting the response of a speaker (11) using a microphone (12). Klippel discloses using a speaker model (i.e. specifications) (Col. 2, lines 24-26) to compensate for nonlinearities in the speaker (Col. 2, lines 1-4). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include data based on specification of the speaker to compensate for nonlinearities in the speaker as taught by Klippel.

Response to Arguments

Applicant's arguments filed 2 August have been fully considered but they are not persuasive.

Applicant argues last paragraph of page 7 that Op De Beek does not disclose equalization based on stored set of calculated equalization tuning gains. The Office respectfully disagrees as Op De Beek discloses equalizing unit 4 which comprises filter banks for correcting the audio signal based on control signal 10 (Paragraph bridging columns 15 and 16). It is inherent that the filters will store equalization tuning gains in order to process the input audio signal.

Applicant further argues, page 8, lines 1-9, that Op De Beek does not disclose calculating gains from an actual speaker output and an ideal frequency response. This is not persuasive as Op De Beek clearly discloses a microphone (14) to receive a sound signal and analyzer (16) to calculate control signals based on the speaker output (signal from 18 to 16) and an ideal response (signal from 25 to 16).

Applicant further argues, page 8, lines 11-19, that Op De Beek does not disclose a fixed, one time, tuning of each speaker by adjusting the equalization based on an ideal frequency response for the type of speaker in question and using a single set of gains. This is not persuasive as these limitations are not found in claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin Michalski whose telephone number is (703)305-5598. The examiner can normally be reached on 8 Hours, 5 day/week.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JIM


XU MEI
PRIMARY EXAMINER